



**LIMITED SITE ASSESSMENT
New West Petroleum Exxon Station #1016
1498 Melrose Avenue
Chula Vista, California 91911
Project 04-111JE-NWCV**

***Prepared for:*
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***For the Benefit of:*
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May 26, 2005

***Cc to:*
Ms. Laurie Apecechea –San Diego County DEH, SAM
H012323-003**

**Michael J. Gibbs, RG 4821
Principal Geologist**

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1.0 INTRODUCTION AND BACKGROUND

1.1 Site Information

The following information applies to the subject site:

DEH Case Number:	H012323-003
APN:	624-080-09-00
Location:	Exxon Station #1016 1498 Melrose Avenue Chula Vista, California 91911
Property Owner:	New West Petroleum, LLC.
UST Owner:	New West Petroleum, LLC.
UST Operator:	New West Petroleum, LLC.
Contact:	Mr. Foad Naderzad
Mailing Address:	5145 Avenida Encinas, Suite C Carlsbad, CA 92008
Phone Number:	(760) 431-1474

The subject site is an Exxon-brand retail gasoline located at 1498 Melrose Avenue (the northwest corner of Orange Avenue and Melrose Avenue) in the City of Chula Vista, California 91911 (Figure 1). The station has been in operation for some time and was previously a Texaco-branded station. The future plans of the owner, New West Petroleum, are to continue to operate the station. A convenience store is located in the northern portion of the property. Underground utilities identified on site include piping and electric related to gas station operation. The underground storage tanks are located northwest of the building, and the fuel piping is known to extend from the side of the islands to the tanks. The site is surrounded by Melrose Avenue to the east; Orange Avenue to the south, and commercial properties to the to the west and north.

The release in question was discovered when soil samples retrieved by the contractor, JENAL Engineering Corp. (JEC), as required during SB989 upgrade work, revealed diesel related compounds below the remote eastern and the southeastern dispensers (temporarily referred to as Dispensers 1 and 5, respectively; currently Dispensers #1/2 and #7/8 – Figure 2). Table 1 and Figure 3 indicate that samples retrieved from 3 feet below what was temporarily referred to as Dispenser 1 (D1-3') and Dispenser 5 (D5-3') were analyzed for Total Petroleum Hydrocarbons as diesel (TPHd) and found to contain 27,000 mg/Kg and 1,500 mg/Kg, respectively. Samples were also analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), but all results were found to be below detection levels in all five below-dispenser samples retrieved.

The County of San Diego, Department of Environmental Health (DEH) issued a letter on July 28, 2004, which identified New West Petroleum as the responsible party for the unauthorized release and indicated that corrective actions needed to be taken, and a written Unauthorized Release Report (URR) needed to be submitted. A URR was prepared by AEC August 13, 2004 and was submitted to the DEH.

The DEH issued a letter on August 23, 2004, which required the submission of a work plan to perform a site assessment. Based on the data obtained by others to date, Advantage Environmental Consulting (AEC) recommended placing two borings on each side of Dispensers 1 and 5 in an effort to delineate the vertical, and possibly horizontal, extent of impact. The work plan was submitted and subsequently approved by DEH Site Assessment and Mitigation program (SAM) in a letter dated November 22, 2004. This report is the result of that approved scope of work.

1.2 Geology

The subject site is underlain by the Pliocene San Diego Formation, which is described as a marine, yellowish-brown, fine- to medium-grained, poor indurated sandstone (Kennedy and Tan, 1977). The site is at an elevation of approximately 235 feet above mean sea level and is without notable topographic variation. The surrounding area slopes gently westward.

1.3 Hydrogeology

The subject site is located in the Otay Hydrologic Unit, Otay Valley Hydrologic Area (10.20). This area has been designated by the Regional Water Quality Control Board (RWQCB, 1994) as having existing beneficial uses of groundwater for municipal, agricultural, and industrial purposes. Surface drainage in the area appears to be westward. The Otay River, the closest perennial surface water feature in the area, lies roughly 4,700 feet south of the site.

According to the GeoTracker web site, no known public wells are located within 2,640 feet of the subject site. A Leaking Underground Fuel Tank (LUFT) site (DEH case H12479-001, Unocal #5763) was indicated to exist at 1495 Melrose Avenue, across Melrose Avenue from the subject site. No indications of depth to groundwater or analytical results were provided.

On January 27, 2005 AEC conducted research at the County of San Diego, Department of Planning and Land Use, Department of Environmental Health. The records at that location identify production wells that have been permitted with the county. All such wells are required to be permitted with the County, even within cities. No records of production wells were found within a radial distance of 2,000 feet. A windshield survey for private water production wells within a radial distance of to 2,000 feet surrounding the subject site was performed by AEC on January 4, 2005. No obvious production wells were observed.

Groundwater was reported in 1996 to be at a depth greater than 80 and possibly 110 feet bs (W.W. Irwin, 1996).

2.0 FIELD ACTIVITIES

2.1 Preparation and Site Safety

Prior to initiating the drilling program, Advantage Environmental Consulting (AEC) delineated with white paint areas where borings were planned, then on December 28, 2004 contacted Underground Service Alert (USA). USA, in turn, notified the representatives of utilities to mark the locations of underground placements in the vicinity of the site. Also, on January 4, 2005 JEC assessed the probable locations of the underground petroleum piping on site. These lines are not traceable through conventional locating means. Potential boring locations had pavement removed and a pilot hole was advanced by JEC to a depth of 3 feet below the surface utilizing a post hole digger and/or hand auger in an attempt to clear any petroleum piping and pump/dispenser electrical supply. No permits were required for the work performed.

AEC developed a site-specific safety plan (SSP). Prior to initiation of site assessment activities, a site safety meeting was held to discuss the hazards associated with the work being performed. The SSP was reviewed and signed by AEC and Contractor/Driller personnel. Exclusion zones, defined by caution tape and barricades, were formed at the rear end of the drill rig and around the concrete saw cutting/repair area. All persons not directly involved with the construction or drilling and sampling processes were excluded from this area. A photo-ionization detector (PID) was used to measure the organic vapor concentrations in soil cuttings.

2.2 Direct Push Drill Rig Site Assessment

On January 4, 2005, AEC placed four soil borings (B1 through B4 – see Figure 2) with powered drilling equipment. A StrataProbe direct push rig was used to place one boring each north and south of dispenser #7/8 (The SB 989 upgrade sample referred to this dispenser as D5) and one boring each east and west of dispenser #1/2 (The SB 989 upgrade sample referred to this dispenser as D1). Soil samples were collected to a depth of 19 feet below the surface (bs). A description of the lithology and visual depiction of samples retrieved is included on the boring logs included as Appendix B.

2.3 Sampling and Analysis

Samples, planned to be taken at 4, 8, 12, 16 and 19 feet bs, and at every change in lithology/change in apparent gasoline impact, were successfully retrieved at the planned depths in accordance with the procedures described in Appendix A. Sample possession was documented using Standard Chain of Custody protocol, and the samples were submitted to a State-certified, laboratory for analysis of TPHd by EPA Method 8015. The laboratory reports, QA/QC, and chain of custody are included in Appendix C.

2.4 Stockpiled Soils and Follow Up

The drill rig did not produce any spoils.

3.0 RESULTS

3.1 Field Observations

Borings B1-B2 and B3-B4 were each located approximately 15 to 17 lateral feet apart, on opposite sides of the associated dispenser. The lithology encounter in all borings was similar and is detailed in the boring logs (Appendix B). The site is underlain by San Diego Formation, characterized by yellowish, moist, medium dense, fine to medium sand. Drill rig refusal was met at 19 feet bs in Boring B3. No groundwater was encountered.

3.2 Laboratory

3.2.1 Tabulated Results

Comprehensive soil sample data is presented on Table 1, and Figures 3, 4 and 5. Soil samples retrieved during drilling indicated TPHd concentrations of all samples in all borings were non-detectable (<5 mg/Kg).

3.2.2 Extent of Impact/Delineation

Horizontal (Figure 3) and vertical (Figures 4 and 5) delineation was achieved.

Conservative calculations were performed utilizing known data and some estimations and assumptions to evaluate the volume of soil impacted and the mass of the release left in place. Only TPHd was evaluated. The details of the approach and the calculations are included as Appendix D. The results of the calculations indicate up to 29.8 cubic yards of soil may still be impacted with up to of 1,079 pounds of TPHd. Volume and mass calculations would likely have been significantly smaller if borings could have been placed closer to the dispensers; however, product piping precluded closer borings.

3.2.3 Exposure Concerns

There are no known conduits for contaminant transport onsite other than shallow utility lines. Obvious natural pathways include gravitational and capillary migration of gasoline in a liquid and vapor state through the sandy soil mass. The extent of impact appears to be very small; therefore

impact to biological receptors does not appear likely. Since the site is, and will continue to be, an operating retail gasoline station, nuisance complaints are not expected to develop. No groundwater production wells were observed onsite or within 2,000 feet, and none were indicated by records to exist within 2,000 to 2,640 feet. No production wells are not expected to exist in this area. The presence of production wells can be evaluated further by obtaining information from the California Department of Water Resources.

4.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The subject site is an Exxon-brand retail gasoline station and future plans are to continue to operate the station. The release in question was discovered during SB 989 upgrade work.

The subject site is located in the Otay Hydrologic Unit, Otay Valley Hydrologic Area (10.20). This area has been designated by the Regional Water Quality Control Board (RWQCB, 1994) as having existing beneficial uses of groundwater for municipal, agricultural, and industrial purposes. No groundwater was encountered in the on site borings. Groundwater is reported by others to be at a depth greater than 80 feet bs. No records of production wells were found within a radial distance of 2,000 to 2,640 feet nor directly observed around the site for a radial distance of 2,000 feet.

Sandy materials beneath the site are San Diego Formation. Comprehensive soil sample data from the site indicate TPHd concentrations of <5 to 27,000 mg/Kg. No sample taken from a depth greater than 3 feet bs had any detectable diesel. Only 2 of 25 samples had a detectable diesel concentration.

Due to the 1) limited extent of this release, 2) the lack of any known public or production wells within 2,000 feet, and 3) the reported significant depth (greater than 80 to 110 feet bs), groundwater below the site is not expected to be significantly impacted by this release. Since no other threats to human health or the environment are expected, it is AEC's opinion that further assessment or mitigative efforts do not appear to be warranted. The subject site should be considered for closure with the residual impacted soil left in place.

5.0 REFERENCES

California Regional Water Quality Control Board, San Diego Region, September 8, 1994, Water Quality Control Plan for the San Diego Basin (9).

Kennedy, M.P. and Tan, S., 1977, Geology of the National City, Imperial Beach and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California Division of Mines and Geology, Map Sheet 29.

W.W. Irwin, 2/28/1996, Supplemental Site Assessment Report, Texaco Service Station, 1498 Melrose Avenue, Chula Vista, California.

6.0 QUALIFICATIONS AND LIMITATIONS

AEC is pleased to have performed environmental assessment services at 1498 Melrose Avenue, Chula Vista, California. These services have been performed in accordance with and are limited by


the scope of work stated in the proposal dated August 31, 2004 and the work plan dated October 25, 2004. AEC assumes no responsibility for detection or assessment of any conditions affecting the property, which were outside the scope of work requested by JEC.

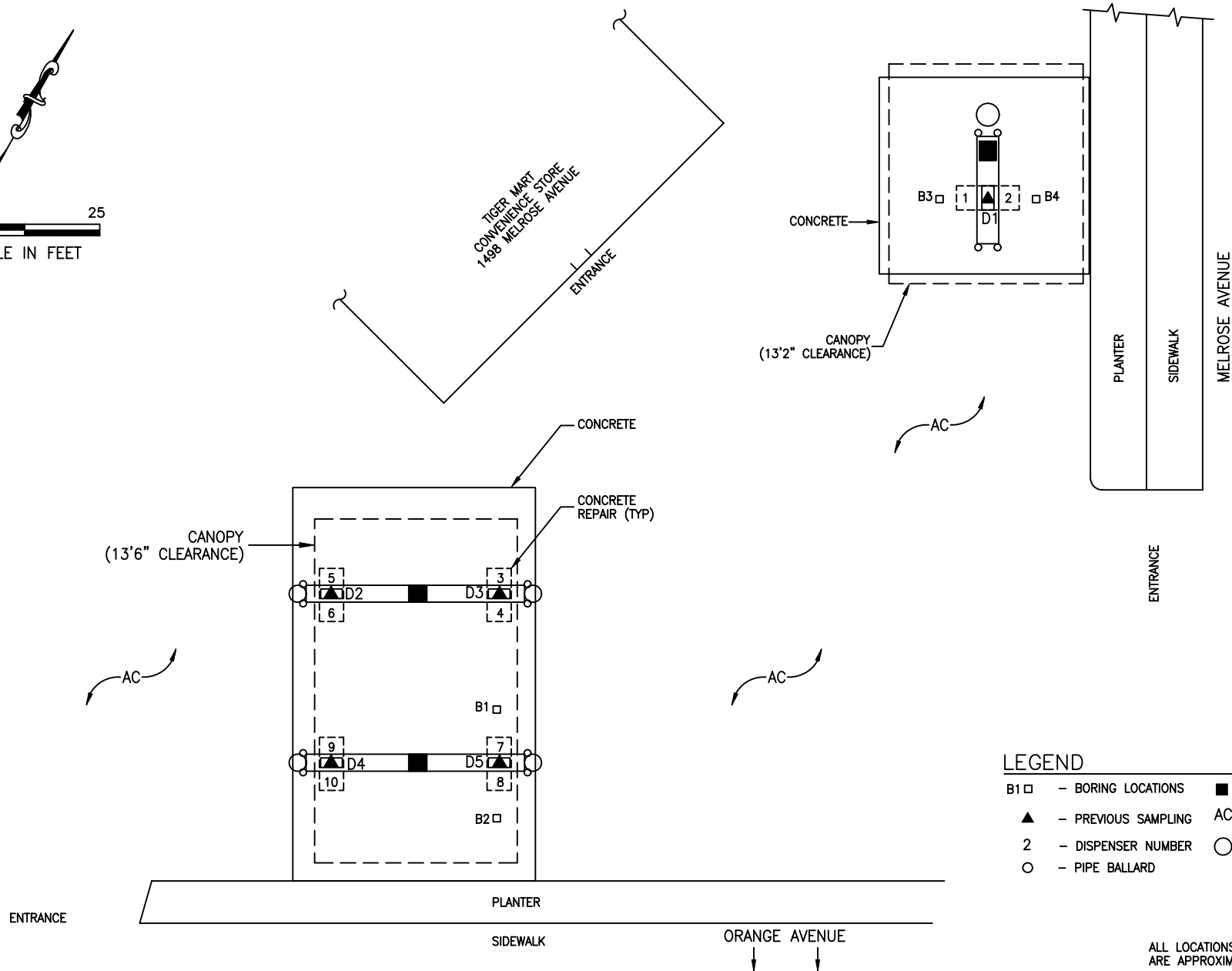
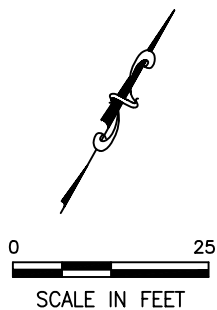
AEC has conducted the tasks outlined in the proposal consistent with that level of care ordinarily exercised by members of the profession currently practicing under similar conditions. In performing these tasks, AEC may have relied on documents, oral statements and other information from public officials and third parties outside of AEC's control. AEC cannot and does not warrant the accuracy of this information.

No environmental assessment is infallible. Some uncertainty will always exist concerning the presence or absence of potentially adverse conditions at any particular property, irrespective of the rigor of the investigation. Accordingly, AEC offers no warranty that adverse environmental conditions, other than those identified in this report, do not exist at 1498 Melrose Avenue, Chula Vista, California, or may not exist there in the future.



ALL LOCATIONS AND DIMENSIONS
ARE APPROXIMATE

Client: NEW WEST PETROLEUM			Title: SITE LOCATION MAP	
Address: EXXON #1016 1498 MELROSE AVENUE CHULA VISTA, CALIFORNIA				
File No.: 04-111 JE NW CV	Acad No.: ADV0031	Date: 1/2005		
			Figure No.: I	



LEGEND

- | | | | |
|------|---------------------|----|----------------------|
| B1 □ | - BORING LOCATIONS | ■ | - CANOPY POST |
| ▲ | - PREVIOUS SAMPLING | AC | - ASPHALTIC CONCRETE |
| 2 | - DISPENSER NUMBER | ○ | - CONCRETE PLANTER |
| ○ | - PIPE BALLARD | | |

ALL LOCATIONS AND DIMENSIONS
ARE APPROXIMATE

Client:

NEW WEST PETROLEUM

Address:

EXXON #1016
1498 MELROSE AVENUE
CHULA VISTA, CALIFORNIA

Title:

SITE PLAN

File No.:

04-111 JE NW CV

Acad No.:

ADV0030

Date:

5/2005

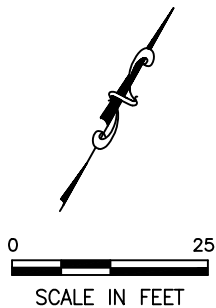
Approved By:

MJG



Figure No.:

2



TIGER MART
CONVENIENCE STORE
1498 MELROSE AVENUE

ENTRANCE

D1	TPHg	TPHd
3.0'	<10	27,000

CONCRETE

B3	TPHd
4'	<5
8'	<5
12'	<5
16'	<5
19'	<5

CANOPY
(13'2" CLEARANCE)

B4	TPHd
4'	<5
8'	<5
12'	<5
16'	<5
19'	<5

PLANTER

SIDEWALK

MELROSE AVENUE

ENTRANCE

CONCRETE

D2	TPHg	TPHd
3.5'	<10	<10

CONCRETE
REPAIR (TYP)

D3	TPHg	TPHd
3.0'	<10	<10

B1	TPHd
4'	<5
8'	<5
12'	<5
16'	<5
19'	<5

CANOPY
(13'6" CLEARANCE)

D5	TPHg	TPHd
3.0'	<10	1,500

B1

B2	TPHd
4'	<5
8'	<5
12'	<5
16'	<5
19'	<5

D4	TPHg	TPHd
2.0'	<10	<10

PLANTER

SIDEWALK

ORANGE AVENUE

LEGEND

- | | |
|---|---------------------------|
| B1 □ - BORING LOCATIONS | ■ - CANOPY POST |
| ▲ - PREVIOUS SAMPLING | AC - ASPHALTIC CONCRETE |
| 2 - DISPENSER NUMBER | ○ - CONCRETE PLANTER |
| ○ - PIPE BALLARD | A A' - CROSS SECTION LINE |
| D1 - TEMPORARY DISPENSER DESIGNATION | |
| TPHg - TOTAL PETROLEUM HYDROCARBON gas (mg/kg) | |
| TPHd - TOTAL PETROLEUM HYDROCARBON diesel (mg/kg) | |

ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE

Client:

NEW WEST PETROLEUM

Address:

EXXON #1016
1498 MELROSE AVENUE
CHULA VISTA, CALIFORNIA

Title:

TPHg & TPHd SOIL CONCENTRATIONS

File No.:

04-111 JE NW CV

Acad No.:

ADV0034

Date:

5/2005

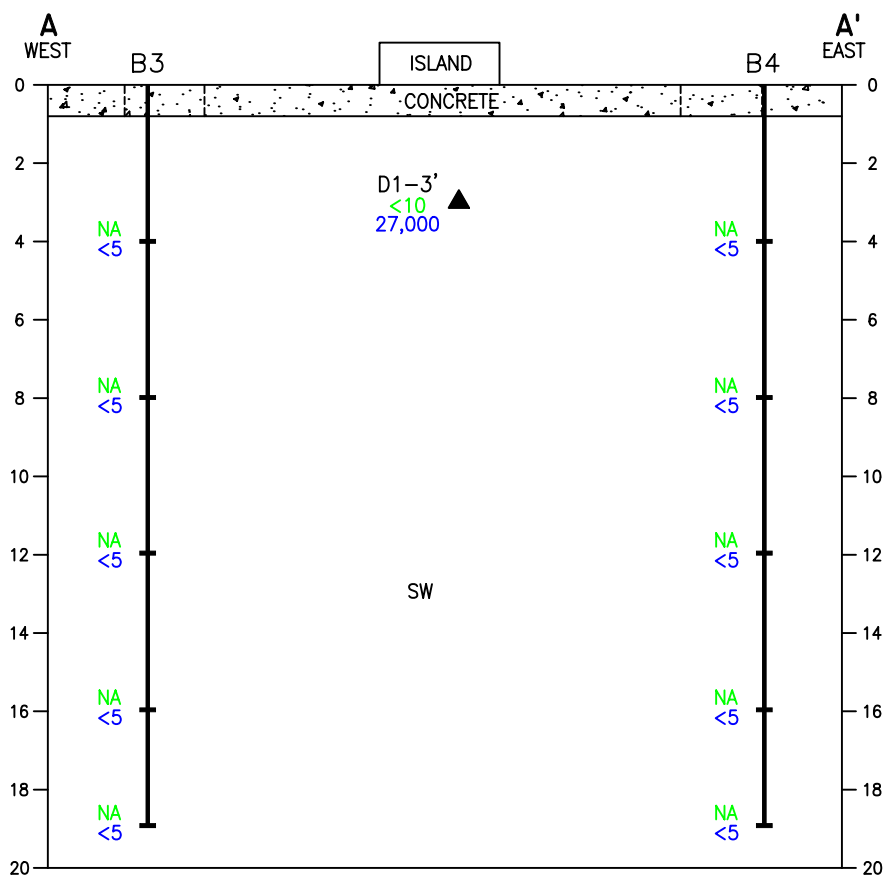
Approved By:

MJG

Figure No.:

3



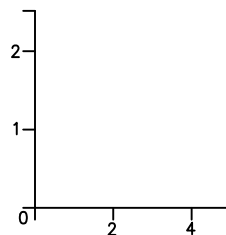


LEGEND

- D1 - PREVIOUS SAMPLE
- B1 - BORING
- +— - SAMPLE POINT
- - LITHOLOGIC CHANGE (SEE LOGS)

LABORATORY RESULTS (mg/kg)

- <10 - TPHg (mg/kg)
- <10 - TPHd (mg/kg)



SCALE: 1"=2.5' (VERTICAL)
SCALE: 1"=5' (HORIZONTAL)


Client: NEW WEST PETROLEUM			Title: CROSS SECTION A-A' WITH TPHg, AND TPHd, SOIL CONCENTRATIONS	
Address: EXXON #1016 1488 MELROSE AVENUE CHULA VISTA, CALIFORNIA				
File No.: 04-111 JE-NW CV	Acad No.: ADV0035	Date: 5/2005		

Table 1: Soil Sample Analytical Results

1498 Melrose Avenue
Chula Vista, California

SAMPLE ID	Date Sampled	E P A M E T H O D	
		8015 (mg/Kg)	
		TPHg	TPHd
Samples Retrieved During Upgrade Work			
D1-3'	7/7/2004	<10	27,000
D2-3.5'	7/7/2004	<10	<10
D3-3'	7/7/2004	<10	<10
D4-2'	7/7/2004	<10	<10
D5-3'	7/7/2004	<10	1,500
SAMPLE ID	Date Sampled	E P A M E T H O D	
		8015 (mg/Kg)	
		TPHg	TPHd
Samples Retrieved From Borings			
B1-4	1/4/2005		<5
B1-8	1/4/2005		<5
B1-12	1/4/2005		<5
B1-16	1/4/2005		<5
B1-19	1/4/2005		<5
B2-4	1/4/2005		<5
B2-8	1/4/2005		<5
B2-12	1/4/2005		<5
B2-16	1/4/2005		<5
B2-19	1/4/2005		<5
B3-4	1/4/2005		<5
B3-8	1/4/2005		<5
B3-12	1/4/2005		<5
B3-12	1/4/2005		<5
B3-16	1/4/2005		<5
B3-19	1/4/2005		<5
B4-4	1/4/2005		<5
B4-8	1/4/2005		<5
B4-12	1/4/2005		<5
B4-16	1/4/2005		<5
B4-19	1/4/2005		<5

Notes: TPHg = Total Petroleum Hydrocarbons as gasoline; TPHd = Total Petroleum Hydrocarbons as diesel
 Soil sample IDs end in a number which indicates the depth (in feet bs) of collection
 Blank cells indicate that the subject analysis was not performed
Detected Concentrations Indicated by BOLD



APPENDIX A

STANDARD FIELD PROCEDURES



APPENDIX A - STANDARD FIELD PROCEDURES

Direct Push Soil Sampling

Soil borings were drilled using a truck-mounted, direct-push drill rig (StrataProbe) operated by HP Labs (HP). Each sample is collected using a retractable piston sampler and retained in 1½-inch diameter acetate sleeves or 2-inch diameter acetate continuous sampling sleeve. The lead end of the sample sleeve is then capped, labeled, and placed into an ice or Blue Ice chilled ice chest or refrigerated at approximately 4° Celsius, until picked up by, or transported to, a state-certified laboratory. Each sample container submitted for analyses is labeled with a unique sample name, job name, sampler signature, date sampled and time of collection. A chain of custody form is used to document sample possession from the time of collection to the time of delivery to the laboratory. When possession of the samples is transferred, the persons relinquishing and receiving possession sign and date the chain of custody form. The sample control officer at the laboratory verifies sample integrity and confirms that the sample is of sufficient quantity for the requested analyses.

A second portion of the sampling sleeve from each sampling depth is then emptied into a zip-lock plastic bag, which is sealed and gently agitated to facilitate volatilization of organic vapors. A photo-ionization detector (PID) is used to measure organic vapor concentrations, which are then recorded on the boring logs. The PID is calibrated with 100-ppmv isobutylene prior to beginning field activities.

The scientist in the field uses the remaining recovered sample to describe the soil in accordance with the Unified Soil Classification System (USCS). Additionally, a qualitative characterization of contamination is made based upon any observed petroleum hydrocarbon odors or soil discoloration. These observations and USCS descriptions are recorded on the boring logs, which are reviewed by a California Registered Geologist.

The use of a StrataProbe does not produce drill cuttings. All sampling equipment is washed prior to use in an Alconox solution and thoroughly rinsed. Cleaning rinse water solution is contained temporarily on site until HP transports any rinse water solution generated from the cleaning of the drill rods and sampler to their facility for discharge into the sanitary sewer. Borings are destroyed using bentonite and a concrete top plug/pavement repair.



APPENDIX B

BORING LOGS



KEY TO BORING LOGS

Moisture

(Modified from USDA Handbook No 18)

TERM	DRY	DAMP	MOIST	WET	SATURATED
Relative Moisture Content	Equal to Ambient Air	Slightly Moist	Between Damp and Field Capacity	Approximately Field Capacity	Above Field Capacity

Relative Density

(ASTM D-1586)

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT*	CLAYS AND PLASTIC SILTS	BLOWS/FOOT*
VERY LOOSE	0 - 4	SOFT	0 - 4
LOOSE	4 - 10	FIRM	4 - 8
MEDIUM DENSE	10 - 30	STIFF	8 - 16
DENSE	30 - 50	VERY STIFF	16 - 32
VERY DENSE	OVER 50	HARD	OVER 32

* Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O D (1-3/8 inch I D) split spoon (ASTM D-1586)

Unified Soil Classification System

(ASTM D-2487)

MAJOR DIVISIONS	GROUP SYMBOLS	TYPICAL NAME
COARSE-GRAINED SOILS More than half of material is larger than no. 200 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts, with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
FINE-GRAINED SOILS More than half of material is smaller than no. 200 sieve size	OL	Organic silts and organic silty clays of low plasticity
	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
	Pt	Peat and other highly organic silts

NOTES:

1. Boundary Classification: Soils possessing characteristics of two groups are designated by combinations of group symbols. For example, GW-GC, well-graded gravel-sand mixture with clay binder.
2. All sieve sizes on this chart are U.S. Standards.
3. The terms "silt" and "clay" are used respectively to distinguish materials exhibiting lower plasticity from those with higher plasticity. The minus No. 200 sieve material is silt if the liquid limit and plasticity index plot below the "A" line on the plasticity chart, and is clay if the liquid limit and plasticity index plot above the "A" line on the chart.

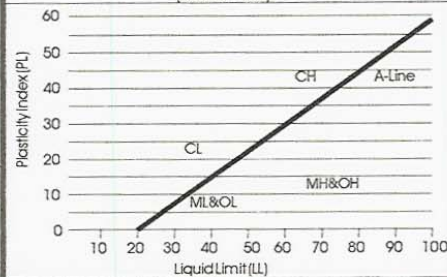
Grain-Size Scale

(ASTM Standards D 422-63; D 643-78)

GRADE LIMITS		GRADE NAME	
mm	Inches	U.S. Standard Sieve Series	
305	12.0		Boulders
76.2	3.0	3.0 in.	Cobbles
4.75	0.19	No. 4	Gravel
2.00	0.08	No. 10	coarse Sand
0.425		No. 40	medium Sand
0.074		No. 200	fine Sand
0.005			Silt
			Clay Size

Soil Plasticity Chart

(ASTM D-2487)



NOTE: Color descriptions on the logs are Munsell colors taken from the Rock Color Chart (Geologic Society of America, 1984)

File No.: 04-111JE-NWCV Date: 5/2005 Approved By: MJG RG Number: 4821 Figure No.: B-1

LOCATION MAP (Not to scale) 		702 Camino Scarpitta Alpine, CA 91901 (619) 722-6210			
BORING LOG: B1					
Date(s): 1/4/05		Project Name: New West Melrose			
Start Time: 09:45		Finish Time: 10:50		Project Number: 04-111JE-NW CV	
Logged By: MJG		Drilling Company: HP Labs		Page 1 of 1	
Elevation: (FL Amsl) N/A	Vapor Detector: Hnu PID	Drilling Method: StrataProbe Direct Push		Sampling Method: 1" Acetate Sleeve	
Filter Pack: _____ Lbs.	Bentonite Seal: 15 _____ Lbs.	Med. Chips _____ Lbs.		Sanitary Seal: _____ Lbs.	
Casing Type: _____	Diameter: _____	Boring Dia.: 1.5"	Water Initial _____		
Screen Type: _____	Slot Size: _____	Diameter: _____	Total Depth: 19'	Water Final NA	

Depth (Feet)	LITHOLOGIC DESCRIPTION UNIT: Color, moisture, rel. density, texture (USCS Symbol), details. Odor, variations.	Sample		Screen		Time	Boring/Well Completion
		Depth /Blows	Designation	Type	Vapor (Ppm)		
0	5" Concrete						
	SAN DIEGO FORMATION: Moderate yellowish brown (10Y5/4), moist, medium dense, fine to medium SAND (SW).						
5			B1-4		0	9:55	
			B1-8		0	10:10	
10	Becomes dark yellowish orange (10YR6/6)		B1-12		0	10:20	
15	Becomes grayish yellow (5Y8/4)		B1-16		0	10:30	
	Becomes grayish orange (10YR7/4)		B1-19		0	10:40	
20	Total Depth 19' No petroleum odor						
25							
30							

LEGEND	Sample Type	Screen Type	Concrete	Perforations B1-4
	Sleeve	A-Ambient	Bentonite Seal	Well Casing
	Grab	B-Bag	Filter Pack	Locking Cap
	Discard	C-Cuttings	Contact - Dashed Where inferred.	Water Table
	No Recovery	H-Head Space		Traffic Rated Well Cover

Drawn By: MJG	Date: 5/26/05	Approved By: MJG	Date:	RG Number: 4821	Fig. No.: B-2
---------------	---------------	------------------	-------	-----------------	---------------

LOCATION MAP (Not to scale) 		702 Camino Scarpitta Alpine, CA 91901 (619) 722-6210			
BORING LOG: B2					
Date(s): 1/4/05		Project Name: New West Melrose			
Start Time: 11:00		Finish Time: 12:00		Project Number: 04-111JE-NW CV	
Logged By: MJG		Drilling Company: HP Labs		Page 1 of 1	
Elevation: (FL Amsl) N/A	Vapor Detector: Hnu PID	Drilling Method: StrataProbe Direct Push		Sampling Method: 1" Acetate Sleeve	
Filter Pack: _____ Lbs.	Bentonite Seal: 15 Lbs.	Med. Chips		Sanitary Seal: _____ Lbs.	
Casing Type: _____	Diameter: _____	Boring Dia.: 1.5"		Water Initial	
Screen Type: _____	Slot Size: _____	Diameter: _____		Total Depth: 19'	
				Water Final NA	

Depth (Feet)	LITHOLOGIC DESCRIPTION UNIT: Color, moisture, rel. density, texture (USCS Symbol), details. Odor, variations.	Sample		Screen		Time	Boring/Well Completion
		Depth /Blows	Type	Type	Vapor (Ppm)		
0	5" Concrete						
	SAN DIEGO FORMATION: Moderate yellowish brown (10Y5/4), moist, medium dense, fine to medium SAND (SW).						
5			⊗ B2-4		0	11:10	
			⊗ B2-8		0	11:20	
10	Becomes dark yellowish orange (10YR6/6)		⊗ B2-12		0	11:30	
15	Becomes grayish orange (10YR7/4)		⊗ B2-16		1	11:40	
			⊗ B2-19		0	11:50	
20	Total Depth 19' No petroleum odor						
25							
30							

LEGEND	Sample Type	Screen Type	Concrete	Perforations
	Sleeve	A - Ambient	Bentonite Seal	B2-4 Well Casing
	Grab	B - Bag	Filter Pack	Locking Cap
	Discard	C - Cuttings	Contact - Dashed Where inferred.	Water Table
	No Recovery	H - Head Space		Traffic Rated Well Cover

Drawn By: MJG	Date: 5/26/05	Approved By: MJG	Date:	RG Number: 4821	Fig. No.: B-3
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LOCATION MAP (Not to scale) 		702 Camino Scarpitta Alpine, CA 91901 (619) 722-6210			
BORING LOG: B3					
Date(s): 1/4/05		Project Name: New West Melrose			
Start Time: 12:10		Finish Time: 13:10		Project Number: 04-111JE-NW CV	
Logged By: MJG		Drilling Company: HP Labs		Page 1 of 1	
Elevation: (Ft. Amsl) N/A	Vapor Detector: Hnu PID	Drilling Method: StrataProbe Direct Push		Sampling Method: 1" Acetate Sleeve	
Filter Pack: _____ Lbs.	Bentonite Seal: 15	Med. Chips _____ Lbs.		Sanitary Seal: _____ Lbs.	
Casing Type: _____	Diameter: _____	Boring Dia.: 1.5"		Water Initial _____	
Screen Type: _____	Slot Size: _____	Diameter: _____		Total Depth: 19'	
				Water Final NA	

Depth (Feet)	LITHOLOGIC DESCRIPTION UNIT: Color, moisture, rel. density, texture (USCS Symbol), details. Odor, variations.	Sample		Screen		Time	Boring/Well Completion
		Depth /Blows	Designation	Type	Vapor (Ppm)		
0	5" Concrete						
	SAN DIEGO FORMATION: Moderate yellowish brown (10Y5/4), moist, medium dense, fine to medium SAND (SW). Becomes grayish orange (10YR7/4)		B3-4	1	9:55		
5			B3-8	0	10:10		
10			B3-12	0	10:20		
15			B3-16	0	10:30		
20			B3-19	6	10:40		
20	Refusal at 19' No petroleum odor						
25							
30							

LEGEND	Sample Type	Screen Type	Concrete	Perforations B3-4
	Sleeve	A - Ambient	Bentonite Seal	Well Casing
	Grab	B - Bag	Filter Pack	Locking Cap
	Discard	C - Cuttings	Contact - Dashed Where Inferred	Water Table
	No Recovery	H - Head Space		Traffic Rated Well Cover

Drawn By: MJG	Date: 5/26/05	Approved By: MJG	Date:	RG Number: 4821	Fig. No.: B-4
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LOCATION MAP (Not to scale) 		702 Camino Scarpitta Alpine, CA 91901 (619) 722-6210			
		BORING LOG: B4			
Date(s): 1/4/05		Project Name: New West Melrose			
Start Time: 13:20		Finish Time: 14:10		Project Number: 04-111JE-NW CV	
Logged By: MJG		Drilling Company: HP Labs		Page 1 of 1	
Elevation: (Fl.Amsl) N/A	Vapor Detector: Hnu PID	Drilling Method: StrataProbe Direct Push		Sampling Method: 1" Acetate Sleeve	
Filter Pack: _____ Lbs.	Bentonite Seal: 15 Lbs.	Med. Chips _____ Lbs.		Sanitary Seal: _____ Lbs.	
Casing Type: _____		Diameter: _____		Boring Dia.: 1.5"	Water Initial _____
Screen Type: _____		Slot Size: _____		Total Depth: 19'	Water Final NA

Depth (Feet)	LITHOLOGIC DESCRIPTION UNIT: Color, moisture, rel. density, texture (USCS Symbol), details. Odor, variations.	Sample		Screen		Time	Boring/Well Completion
		Depth /Blows	Type	Type	Vapor (Ppm)		
0	5" Concrete						
	SAN DIEGO FORMATION: Moderate yellowish brown (10Y5/4), moist, medium dense, fine to medium SAND (SW).		⊗ B4-4		6	13:30	
5			⊗ B4-8		7	13:40	
10			⊗ B4-12		14	13:50	
15			⊗ B4-16		7	13:55	
			⊗ B4-19		12	14:00	
20	Total Depth 19' No petroleum odor						
25							
30							

LEGEND	Sample Type		Screen Type			
	⊗ Sleeve	A - Ambient	Concrete	Bentonite Seal	Perforations	
	⊠ Grab	B - Bag	Filter Pack	Well Casing	Locking Cap	
	⊡ Discard	C - Cuttings	Contact - Dashed Where inferred	Water Table		
■ No Recovery	H - Head Space					

Drawn By: MJG	Date: 5/26/05	Approved By: MJG	Date: _____	RG Number: 4821	Fig. No.: B-5
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APPENDIX C

LABORATORY REPORTS





LABORATORY REPORT

Prepared For: Advantage Environmental
702 Camino Scarpitta
Alpine, CA 91901
Attention: Mike Gibbs

Project: NW-CB
04-111

Sampled: 01/04/05
Received: 01/04/05
Issued: 01/11/05 11:25

NELAP #01108CA CA ELAP #1197 CSDLAC #10117

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IOA0100-01	B1-4	Soil
IOA0100-02	B1-8	Soil
IOA0100-03	B1-12	Soil
IOA0100-04	B1-16	Soil
IOA0100-05	B1-19	Soil
IOA0100-06	B2-4	Soil
IOA0100-07	B2-8	Soil
IOA0100-08	B2-12	Soil
IOA0100-09	B2-16	Soil
IOA0100-10	B2-19	Soil
IOA0100-11	B3-4	Soil
IOA0100-12	B3-8	Soil
IOA0100-13	B3-12	Soil
IOA0100-14	B3-16	Soil
IOA0100-15	B3-19	Soil
IOA0100-16	B4-4	Soil
IOA0100-17	B4-8	Soil
IOA0100-18	B4-12	Soil
IOA0100-19	B4-16	Soil
IOA0100-20	B4-19	Soil

Reviewed By:

Del Mar Analytical, Irvine
Allison Santos
Project Manager



Advantage Environmental
 702 Camino Scarpitta
 Alpine, CA 91901
 Attention: Mike Gibbs

Project ID: NW-CB
 04-111
 Report Number: IOA0100

Sampled: 01/04/05
 Received: 01/04/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOA0100-01 (B1-4 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				65 %				
Sample ID: IOA0100-02 (B1-8 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				61 %				
Sample ID: IOA0100-03 (B1-12 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				60 %				
Sample ID: IOA0100-04 (B1-16 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				64 %				
Sample ID: IOA0100-05 (B1-19 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				68 %				
Sample ID: IOA0100-06 (B2-4 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				56 %				
Sample ID: IOA0100-07 (B2-8 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				58 %				
Sample ID: IOA0100-08 (B2-12 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				56 %				

Del Mar Analytical, Irvine
 Allison Santos
 Project Manager



Advantage Environmental
 702 Camino Scarpitta
 Alpine, CA 91901
 Attention: Mike Gibbs

Project ID: NW-CB
 04-111
 Report Number: IOA0100

Sampled: 01/04/05
 Received: 01/04/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOA0100-09 (B2-16 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				75 %				
Sample ID: IOA0100-10 (B2-19 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				70 %				
Sample ID: IOA0100-11 (B3-4 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				69 %				
Sample ID: IOA0100-12 (B3-8 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				67 %				
Sample ID: IOA0100-13 (B3-12 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				70 %				
Sample ID: IOA0100-14 (B3-16 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				71 %				
Sample ID: IOA0100-15 (B3-19 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				76 %				
Sample ID: IOA0100-16 (B4-4 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				65 %				

Del Mar Analytical, Irvine
 Allison Santos
 Project Manager



Advantage Environmental
702 Camino Scarpitta
Alpine, CA 91901
Attention: Mike Gibbs

Project ID: NW-CB
04-111
Report Number: IOA0100

Sampled: 01/04/05
Received: 01/04/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOA0100-17 (B4-8 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				67 %				
Sample ID: IOA0100-18 (B4-12 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				73 %				
Sample ID: IOA0100-19 (B4-16 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				73 %				
Sample ID: IOA0100-20 (B4-19 - Soil)				Sampled: 01/04/05				
Reporting Units: mg/kg								
EFH (C8 - C40)	EPA 8015 MOD.	5A05042	5.0	ND	1	1/5/2005	1/5/2005	
Surrogate: n-Octacosane (40-130%)				76 %				

Del Mar Analytical, Irvine
Allison Santos
Project Manager



Advantage Environmental
 702 Camino Scarpitta
 Alpine, CA 91901
 Attention: Mike Gibbs

Project ID: NW-CB
 04-111
 Report Number: IOA0100

Sampled: 01/04/05
 Received: 01/04/05

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5A05042 Extracted: 01/05/05									
Blank Analyzed: 01/05/2005 (5A05042-BLK1)									
EFH (C8 - C40)	ND	5.0	mg/kg						
Surrogate: n-Octacosane	4.67		mg/kg	6.67		70 40-130			
LCS Analyzed: 01/05/2005 (5A05042-BS1)									
EFH (C8 - C40)	20.2	5.0	mg/kg	33.3		61 40-120			
Surrogate: n-Octacosane	4.36		mg/kg	6.67		65 40-130			
Matrix Spike Analyzed: 01/05/2005 (5A05042-MS1)					Source: IOA0100-04				
EFH (C8 - C40)	24.9	5.0	mg/kg	33.3	ND	75 30-125			
Surrogate: n-Octacosane	4.69		mg/kg	6.67		70 40-130			
Matrix Spike Dup Analyzed: 01/05/2005 (5A05042-MSD1)					Source: IOA0100-04				
EFH (C8 - C40)	23.5	5.0	mg/kg	33.3	ND	71 30-125	6	30	
Surrogate: n-Octacosane	4.47		mg/kg	6.67		67 40-130			

Del Mar Analytical, Irvine
 Allison Santos
 Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

Advantage Environmental
702 Camino Scarpitta
Alpine, CA 91901
Attention: Mike Gibbs

Project ID: NW-CB
04-111
Report Number: IOA0100

Sampled: 01/04/05
Received: 01/04/05

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical, Irvine
Allison Santos
Project Manager

*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced,
except in full, without written permission from Del Mar Analytical.*

IOA0100 <Page 6 of 7>



Advantage Environmental
702 Camino Scarpitta
Alpine, CA 91901
Attention: Mike Gibbs

Project ID: NW-CB
04-111
Report Number: IOA0100

Sampled: 01/04/05
Received: 01/04/05

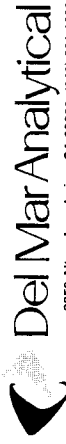
Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 8015 MOD.	Soil	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Allison Santos
Project Manager



2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (602) 785-0043 FAX (602) 785-0851
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (619) 505-9596 FAX (619) 505-9689

CHAIN OF CUSTODY FORM

IOA0100 101474 Page: 1 of 2

Client Name: Advantage Environmental Consulting (AEC) P.O./Project Number: 04-111
Address: 702 Camino Scarpitta
City: Appleton State: CA Zip: 91901
Tel: (619) 417-9400 Fax: (619) 722-6210
Project Name: NW-Melrose
Project Manager: MTC
Sampler(s) (signature): [Signature]

Sample I.D.	Matrix	Date Sampled	Time	Preservation	Number of Containers	Type of Containers	8015 (Gas) <input type="checkbox"/> 8020 (BTEX) <input type="checkbox"/>	MTBE (8020) <input type="checkbox"/>	8015/8020/MTBE <input type="checkbox"/>	8015 (Diesel) <input checked="" type="checkbox"/>	simulated fuel <input checked="" type="checkbox"/>	distillation <input type="checkbox"/> fingerprint <input type="checkbox"/>	TRPH - EPA 418.1 <input type="checkbox"/>	EPA 8010 <input type="checkbox"/>	EPA 8010/8020 <input type="checkbox"/>	EPA 8270 <input type="checkbox"/>	Title 22 Metals EPA 6010/7000 <input type="checkbox"/>	+Cr VI <input type="checkbox"/>	EPA 8260 <input type="checkbox"/> + Oxygenates <input type="checkbox"/>	+ MTBE <input type="checkbox"/> MTBE only <input type="checkbox"/>	Lead <input type="checkbox"/>	pH <input type="checkbox"/>	
B1-4	Soil	1/4/05	9:55	-	1	Skene				X	X												
B1-8			10:10							X	X												
B1-12			10:20							X	X												
B1-16			10:30							X	X												
B1-19			10:40							X	X												
B2-4			11:10							X	X												
B2-8			11:20							X	X												
B2-12			11:30							X	X												
B2-16			11:40							X	X												
B2-19			11:50							X	X												

Relinquished by: [Signature] Date/Time: 1/4/05 14:00
Relinquished by: [Signature] Date/Time: 1/4/05 16:25
Relinquished by: [Signature] Date/Time: 1/4/05 16:25

Received by: [Signature] Date/Time: 1-4-05 1900
Received by: [Signature] Date/Time: 1-4-05 1625
Received in Lab by: [Signature] Date/Time: 1-4-05 1625

Turnaround Time: (check one):
Same Day _____
24 Hours _____
48 Hours _____
72 hours _____
5 Days _____
Standard _____

Sample Integrity:
Intact: ☒ On Ice ☒

Remarks: Run (1) PNA analysis on high lead + TPHs on this sheet

Note: By relinquishing samples to Del Mar Analytical, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be disposed of after 30 days.

CHAIN OF CUSTODY FORM

Client Name:	AEC		P.O./Project Number:	04-111																							
Address:			Project Name:	NW - highway																							
City:			Project Manager:																								
Tel:			Sampler(s) (signature):																								
Fax:			State:	Zip:																							
Sample I.D.	Matrix	Date Sampled	Time	Preservation	Number of Containers	Type of Containers	8015 (Gas) <input type="checkbox"/> 8020 (BTEX) <input type="checkbox"/>	8015 (Diesel) <input checked="" type="checkbox"/>	8015/8020/MTBE <input type="checkbox"/>	8015 (Gas) <input type="checkbox"/> 8020 (BTEX) <input type="checkbox"/>	8015/8020/MTBE <input type="checkbox"/>	simulated fuel <input checked="" type="checkbox"/>	distillation <input type="checkbox"/> fingerprint <input type="checkbox"/>	Oil & Grease - EPA 413.2	TRPH - EPA 418.1	EPA 8010 <input type="checkbox"/>	EPA 8010/8020 <input type="checkbox"/>	EPA 8270	Title 22 Metals EPA 6010/7000 <input type="checkbox"/>	+Cr VI <input type="checkbox"/>	EPA 8260 <input type="checkbox"/> + Oxygenates <input type="checkbox"/>	+ MTBE <input type="checkbox"/> MTBE only <input type="checkbox"/>	Lead	PH			
B3-4	Soil	1/4/05	12:00	-	1	Sieve																					
B3-8			12:20																								
B3-12			12:30																								
B3-16			12:45																								
B3-19			13:00																								
B4-4			13:30																								
B4-8			13:40																								
B4-12			13:50																								
B4-16			13:55																								
B4-18			14:00																								
Relinquished by:		Date/Time:		1/4/05 14:00		Received by:		Date/Time:		1-4-05 1400		Turnaround Time:		(check one):		72 hours		5 Days		Standard		X		On Ice		6°C	
Relinquished by:		Date/Time:		1-4-05 1625		Received by:		Date/Time:		1-4-05 1625		Turnaround Time:		(check one):		72 hours		5 Days		Standard		X		On Ice		6°C	
Relinquished by:		Date/Time:		1-4-05 1625		Received in Lab by:		Date/Time:		1-4-05 1625		Turnaround Time:		(check one):		72 hours		5 Days		Standard		X		On Ice		6°C	
Remarks: Run(1) PNA Analysis on Leachate TPHd on this sheet																											

Note: By relinquishing samples to Del Mar Analytical, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be disposed of after 30 days.



Jenal
7959 Lemon Grove Way, P.O. Box 459
Lemon Grove CA, 91945

Project: JE070804-10
Project Number: EXXON # 1016
Project Manager: Mr. Al Westermeyer

Reported:
14-Jul-04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D1-3'	W407002-01	Soil	07-Jul-04	08-Jul-04
D2-3.5'	W407002-02	Soil	07-Jul-04	08-Jul-04
D3-3'	W407002-03	Soil	07-Jul-04	08-Jul-04
D4-2'	W407002-04	Soil	07-Jul-04	08-Jul-04
D5-3'	W407002-05	Soil	07-Jul-04	08-Jul-04



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14-Jul-04

Soil Analyses

H&P Mobile Geochemistry Lab W1

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
D1-3' (W407002-01) Soil Sampled: 07-Jul-04 Received: 08-Jul-04									
Gasoline (C5-C11)	ND	10	mg/kg	1	WG40901	09-Jul-04	09-Jul-04	DHS LUFT	
Diesel (C12-C24)	27000	10	"	"	"	"	"	"	
D2-3.5' (W407002-02) Soil Sampled: 07-Jul-04 Received: 08-Jul-04									
Gasoline (C5-C11)	ND	10	mg/kg	1	WG40901	09-Jul-04	09-Jul-04	DHS LUFT	
Diesel (C12-C24)	ND	10	"	"	"	"	"	"	
D3-3' (W407002-03) Soil Sampled: 07-Jul-04 Received: 08-Jul-04									
Gasoline (C5-C11)	ND	10	mg/kg	1	WG40901	09-Jul-04	09-Jul-04	DHS LUFT	
Diesel (C12-C24)	ND	10	"	"	"	"	"	"	
D4-2' (W407002-04) Soil Sampled: 07-Jul-04 Received: 08-Jul-04									
Gasoline (C5-C11)	ND	10	mg/kg	1	WG40901	09-Jul-04	09-Jul-04	DHS LUFT	
Diesel (C12-C24)	ND	10	"	"	"	"	"	"	
D5-3' (W407002-05) Soil Sampled: 07-Jul-04 Received: 08-Jul-04									
Gasoline (C5-C11)	ND	10	mg/kg	1	WG40901	09-Jul-04	09-Jul-04	DHS LUFT	
Diesel (C12-C24)	1500	10	"	"	"	"	09-Jul-04	"	



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Reported:
14-Jul-04

Soil Analyses - Quality Control H&P Mobile Geochemistry Lab W1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch WG40901 - Freon Extraction

Blank (WG40901-BLK1)

Prepared & Analyzed: 09-Jul-04

Gasoline (C5-C11)	ND	10	mg/kg
Diesel (C12-C24)	ND	10	"

Matrix Spike (WG40901-MS1)

Source: W407002-04

Prepared & Analyzed: 09-Jul-04

Gasoline (C5-C11)	230	10	mg/kg	200	ND	115	67-125
Diesel (C12-C24)	510	10	"	500	ND	102	67-125

Matrix Spike Dup (WG40901-MSD1)

Source: W407002-04

Prepared & Analyzed: 09-Jul-04

Gasoline (C5-C11)	230	10	mg/kg	200	ND	115	67-125	0.00	30
Diesel (C12-C24)	560	10	"	500	ND	112	67-125	9.35	30



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Project: JE070804-10
Project Number: EXXON # 1016
Project Manager: Mr. Al Westermeyer

Reported:
14-Jul-04

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

APPENDIX D

VOLUME AND MASS CALCULATIONS



APPENDIX D - Calculation of the Residual Mass of TPHd in Soil

Definitions/Assumptions:

- 1) 1 Kg = 2.2 pounds.
- 2) 1 cubic foot of soil weights 48 Kg.
- 3) In preparation for calculations of the mass of the residual TPHd in the subsurface soil, AEC assumed conservatively a cylinder of soil impacted with TPHd at the concentration of the below dispenser sample (retrieved during upgrade work), and with a radius one half the distance to the non-detectable boring samples (Figure 3).

The first cylinder (Cylinder 1) is centered at Sample D1-3' at fuel dispenser island 1/2 and extends (see cross section – Figure 4) for a radial distance of 3.75 feet. The only sample with TPHd is D1-3' (27,000 mg/Kg). The cylinder is 8 feet deep, from the surface above Sample D1-3' to Samples B3- 8 and B4-8, both at a depth of 8 feet bs.

The second cylinder (Cylinder 2) is centered at Sample D5-3' at fuel dispenser island 7/8 and extends (see cross section – Figure 5) for a radial distance of 4.25 feet. The only sample with TPHd is D5-3' (1,500 mg/Kg). The cylinder is 8 feet deep, from the surface above D5-3' to Samples B1-8 and B2-8, both at a depth of 8 feet bs.

Calculations:

Equation for mass: [(Volume of cylinder-impacted soil in cubic feet (pi X radius² X height) X (weight of soil in Kg per ft³) X (average concentration of TPHd in soil in mg/Kg X 2.2 lbs/Kg X 1 Kg/1,000,000 mg)] = TPHd Mass (lbs)

Cylinder 1 – Radius: 3.75 feet; Height: 0 to 8feet bs; TPHd Concentration in cylinder: 27,000 mg/Kg

Volume = $3.14 \times 3.75 \text{ ft} \times 3.75 \text{ ft} \times 8 \text{ ft} = 353 \text{ ft}^3 = 13.1 \text{ yds}^3$

TPHd Mass = $[(353 \text{ ft}^3) \times 48 \text{ Kg/ ft}^3 \times (27,000) \text{ mg/Kg} \times 2.2 \text{ lbs/Kg} \times 1 \text{ Kg/1,000,000 mg}] = 1,007 \text{ lbs}$

Volume of Cylinder 1 = Up to 13.1 yds³

TPHd Mass of Cylinder 1 = Up to 1,007 lbs

Cylinder 2 – Radius: 4.25 feet; Height: 0 to 8feet bs; TPHd Concentration in cylinder: 1,500 mg/Kg

Volume = $3.14 \times 4.25 \text{ ft} \times 4.25 \text{ ft} \times 8 \text{ ft} = 454 \text{ ft}^3 = 16.7 \text{ yds}^3$

TPHd Mass = $[(454 \text{ ft}^3) \times 48 \text{ Kg/ ft}^3 \times (1,500) \text{ mg/Kg} \times 2.2 \text{ lbs/Kg} \times 1 \text{ Kg/1,000,000 mg}] = 72 \text{ lbs}$

Volume of Cylinder 2 = Up to 16.7 yds³

TPHd Mass of Cylinder 2 = Up to 72 lbs

Total of Cylinder 1 + Cylinder 2:

Total TPHd Volume = Up to 29.8 yds³

Total TPHd Mass = Up to 1,079 lbs

In reality the mass of TPHd left in place is probably much smaller. It can be assumed that the source is a dispenser leak and concentrations are highest directly below the dispenser. In AEC's experience, concentrations typically decrease rapidly away from a dispenser leak source. This assertion is supported by the lack of any detectable TPHd indicated in boring samples either laterally from or tangentially below the dispenser samples. Impact would have been expected to be detected in these boring samples if the release was large. Volume and mass calculations would likely have been significantly smaller if borings could have been placed closer to the dispensers; however, product piping precluded closer borings.